BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company (U39E) for Approval of its Demand Response Programs, Pilots and Budgets for Program Years 2023-2027.	Application 22-05-002 (filed May 2, 2022)
And Related Matters.	Application 22-05-003 Application 22-05-004

DIRECT TESTIMONY OF TED HOWARD
ON BEHALF OF SMALL BUSINESS UTILITY ADVOCATES

Jennifer L. Weberski
Litigation Supervisor

Small Business Utility Advocates

548 Market Street, Suite 11200
San Francisco, CA 94104
Telephone: (703) 489-2924
Email: jennifer@utilityadvocates.org

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SBUA
Small Business Utility Advocates

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ATTACHMENTS

I. Identification & Qualifications

Q: Mr. Howard, please state your name, occupation, and business address.

A: I am Ted Howard. I am the Senior Energy Policy Analyst for Small Business Utility Advocates (SBUA), 548 Market Street, Suite 11200, San Francisco, California.

Q: Summarize your professional education and experience.

A: I earned a Bachelor of Science in Resource Economics from University of Massachusetts in 1977 and a Master of Science in Resource Economics from Virginia Tech in 1980.

In 1981, I started my career as an Economist at the Massachusetts Department of Public Utilities. From 2005-2012, I spent 7 years working as an Analyst at the California Public Utilities Commission, focused on distributed energy resources. From 2012-2019, I spent 7 years working with my small consulting business, Sustaenable, on energy issues in the Bay Area, including consulting with PG&E on electric vehicle charging station challenges and strategies for small and medium businesses. I visited over 200 small businesses in the San Francisco Bay area as an energy ambassador for PG&E and Peninsula Clean Energy, consulting regarding distributed energy resource programs.

During my 40-year career, I have also has held numerous executive and management positions with large and small corporations. In addition to my degrees, I have certifications in Energy Innovation & Emerging Technologies, Stanford University (2012), Smart Grid Technology, University of California-Berkeley (2011), and Sustainable Energy & Storage, Stanford University (2011); and I have published numerous reports on energy and policy matters.

My professional qualifications are further summarized in Attachment A.

Q: Have you testified previously in utility proceedings?

A: I have testified on behalf of SBUA along with SBUA Counsel in a variety of CPUC energy proceedings.

II. Introduction

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Small Business Utility Advocates. SBUA's mission is to represent the utility interests of the small business community. Maintaining equitable and fair utility programs, including demand response programs and pilots to facilitate the success of small commercial customers, is a high priority for SBUA.[1]

Small businesses are not only vital to California's economic health and welfare but also constitute an important class of ratepayers for utility companies. The ratepayer interests of this class often diverge from residential ratepayers and larger commercial customers, on a variety of utility matters. The needs of small business are critical to consider not only because they have a substantial impact on California's economy, but also because engagement from small businesses and their employees is critical to the future of California's grid. There are approximately 4.1 million small businesses in California that comprise 99.8% of all employer firms, provide 48.5% of private sector employment, account for over 214,000 net new jobs, and comprise approximately 42.1% of California's $165.6 billion in exports.[2]

[1] *See* SBUA website at www.utilityadvocates.org.

[2] California Small Business Profile, U.S. Small Business Administration Office of Advocacy. https://cdn.advocacy.sba.gov/wp-content/uploads/2020/06/04142955/2020-Small-Business-Economic-Profile-CA.pdf.

Q: What is the scope of your testimony?

A: I reviewed the applications of Pacific Gas Electric Company (PGE), San Diego Gas & Electric Company (SDG&E) and Southern California Edison Company (SCE) filed in Application 22-05-002, *et al*. I have specifically reviewed the portions of the applications with regard to Phase 1 of this proceeding, the 2023 bridge year funding requests.

Q: What issues do you address?

A: I address each of the five issues outlined in the July 5, 2022 Scoping Memo and Ruling regarding Phase 1 of the proceeding, specifically the 2023 bridge funding for demand response programs as requested by the three investor-owned utilities. My testimony is organized in response to the five outlined questions of the Scoping Memo and Ruling as specifically requested on Page 6 of the Ruling.

III. Applications Compliance with Commission Directives.

Q: Do the applications of PG&E, SCE, and SDG&E ("the IOUs") requesting approval of DR programs and budgets for Year 2023 advance the goals, principles, and guidance adopted in D.16-09-056 and comply with the directives in D.16-09-056, D.17-12-003, D.21-03-056, and D.21-12-015 as well as other relevant directives listed in prior Commission decisions and rulings?

A: Yes. It appears that PG&E, SCE, and SDG&E are in general compliance with the goals, principles, and guidance in D.16-09-056 and directives from D.16-09-056, D.17-12-003, D.21-03-056, and D.21-12-015. There are some particular directives from D.21-12-015 that I believe are the most important for the Utilities comply with, as I highlight below.

Q: What are the directives from D.21-12-015 that you would like to highlight?

A: First, the language of D.21-12-015 from the, "It is Ordered" section, which states:

> "…PG&E, SCE, and SDG&E…"shall use their best efforts to meet a revised targeted procurement range of 2,000 megawatts (MW) to 3,000 MW for summers 2022 and 2023….the revised targeted procurement range represents 900 – 1,350 MW of additional procurement for SCE and PG&E, and 200 – 300 MW for SDG&E."[3]

Q: Why is this language important?

A: I stress the importance of demand response in contributing towards these procurement requirements.

Q: What is your recommendation?

A: The procurement requirements should be of consideration when evaluating the demand response programs, even during the bridge year. I recommend that the Commission focus particularly on and continue to ensure that the following policy directives from D.21-12-015 are followed by the IOUs:

a) The Commission authorized PG&E's proposal to create and manage a new out-of-market residential smart thermostat control pilot program for 2022 and 2023. The Commission authorized PG&E to spend an incremental $17.5 million in incentives, administration, and marketing in 2022 and 2023 for this pilot. For the program to continue beyond 2023, the Commission should direct PG&E to ensure that this program is market integrated as supply-side demand response.[4]

[3] D.21-12-015, p. 161.

[4] *Id.,* p. 165.

b) The Commission further ordered that 50% of the technology incentive budget of the smart thermostat program, or up to $11.25 million, should be available to third-party DR providers (DRPs) to provide rebates through the third-party supply-side DR programs. The third-party DRPs should have competitively equal access to the rebates as the IOUs.[5]

c) A smart thermostat technology incentive of $75 is authorized but is not to be combined or "stacked" with thermostat technology incentives provided by the existing Auto DR programs. Prior to the incentive payment, the IOUs are to certify installation of an eligible thermostat and enrollment in an eligible IOU or third-party market integrated supply-side DR program.[6]

d) When implementing the Integrated Demand-Side Management (IDSM) Guidance in D.21-12-015 and D.18-05-041, the IOUs should indicate how the remaining budget should be allocated among the IOUs to run their integrated EE/DR programs.[7]

e) Energy storage, which is often an integral component of DR programs, can be both IOU and third-party resources for meeting procurement targets in 2022 and 2023. The Commission encouraged siting the energy storage resources in locations where they will also provide benefits to local reliability and DACs.[8]

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[5] D.21-12-015, pp. 173-174

[6] *Id.,* pp. 175-176

[7] *Id.,* p. 176.

[8] *Id.*, pp. 184-185

My opinion is that the Applications comply with these key directives with regard to their 2023 bridge year funding requests.

IV. Rule 24 Implications.

Q: Are the Utilities' proposed 2023 changes to programs and activities, including pilot recommendations and Rule 24 Program Information Technology system enhancements, reasonable and should they be adopted? Similarly, are parties' proposed changes to utilities' programs reasonable?

A: The IOUs proposed 2023 changes to programs and activities seem generally reasonable, although I recommend the Commission consider proposed changes by other stakeholders in this proceeding before adoption. My understanding is these proposed changes may be suggested by other parties in their direct testimony, and therefore I reserve judgment on whether the Utilities' proposals should be adopted.

I also support the Commission's directive in D.21-12-015, Conclusions of Law #148, approving PG&E's request for $1.2 million in incremental funds for Information Technology system enhancements to support third-party DR, with PG&E using the one-way balancing account authorized in D. 21-03-056 to track these expenses.[9]

The IOU proposals should not hinder in any way Rule 24, which allows qualified third-parties to solicit IOU customers to participate in their DR programs and then "bid in" the electricity reduction into the wholesale electricity market administered by CAISO.

[9] D. 21-12-015, p. 157.

V. Budget and Cost-Effectiveness.

Q: Are the Utilities' requested budgets to implement the proposed programs and cost and rate recovery requests, including continued fund shifting flexibility, reasonable?

A: Not necessarily. Whether the requested budgets are reasonable depends upon tests for cost effectiveness, as further discussed below.

In addition, I support in this testimony Section 4.3.2 from D.21-12-015, in which the Commission refers to D.21-03-056. D.21-03-056 directs the IOUs to utilize unspent funds from their existing DR budgets adopted in D.17-12-003, to the extent existing funds are available. D.21-12-015 directs that to the extent that any tariff amendments are necessary to effectuate the DR program changes ordered in that Decision, those changes should be documented in a Tier 1 Advice Letter, as well as the process for transferring balances within the IOUs DR Programs Balancing Account and Base Revenue Requirement Balancing Account for this purpose.

I recommend the Commission maintain these requirements, as outlined.

Q: Are the Utilities proposed programs and portfolios cost-effective pursuant to cost-effectiveness protocols adopted in D.15-11-042 and D.16-06-007? If they are not cost-effective, should they be adopted?

A: Whether the proposed programs and portfolios are cost effective remains to be seen. I recommend utilizing the Societal Cost Test primarily, with the Program Administrator Cost test as a supplemental test.

The most recent DR cost effectiveness protocols provided on the CPUC Demand Response Cost Effectiveness webpage are the 2016 DR Cost Effectiveness Protocols. That document indicates that the Total Resource Cost (TRC) Test, which

(imperfectly) seeks to calculate the costs and benefits to "society" of a demand-side resource, should reflect the following additional benefits to ratepayers of DR.[10]

- Social non-energy benefits, such as environmental benefits (in addition to the avoided GHG cost included in the avoided cost calculator), job creation benefits, or health benefits.
- Utility non-energy benefits, such as fewer customer calls or improved customer relations.
- Market benefits, such as market power mitigation or market transformation benefits

The 2016 DR Protocols also indicate that the following costs of DR resources should also be considered:

- Administrative and capital costs incurred by the LSE
- Participant costs (capital costs to participant + value of service lost + transaction costs)
- Increased supply costs, if any

The 2016 DR Protocols also review the Program Administrator Cost (PAC) Test, which measures the cost-effectiveness from the perspective of the Load Serving Entity (LSE) or other entity administering the DR program. The PAC benefits are:

- Avoided costs of supplying electricity
- Revenue the program may earn in exchange for CAISO market participation
- Utility non-energy benefits
- Market benefits

The PAC costs of a DR resource are identified as:

- Administrative and capital costs incurred by the LSE

[10] CPUC 2016 DR Cost Effectiveness Protocols, p.20.

- Incentives paid
- Increased supply costs, if any

Q: What is your recommendation?

A: I recommend prioritization of the PAC test over the TRC test. The TRC is increasingly fraught with difficulties, in part due to reductions in avoided costs and the increasingly strict building and appliance code requirements. Resultingly, the TRC test has resulted in an underinvestment in programs with benefits which are difficult to quantify with an avoided cost framework, including programs focused on Hard to Reach (HTR) customers, Disadvantaged Communities (DAC), and small and diverse businesses.

For example, the TRC has a participant cost factor which requires investments from customers, which results in implementation of low-cost programs with short-term savings. The participant cost factor does not consider or seek to quantify other reasons for EE and DR, including environmental benefits, comfort, safety, reliability, improved indoor air quality, and increased productivity. Furthermore, the TRC does not penalize the inclusion of project financing, while the TRC does.

Looking forward, I recommend application of the Societal Cost Test (SCT) as the primary cost effectiveness test, supplemented by the PAC test as a secondary cost effectiveness test. The SCT expands the scope of included costs considered by the TRC to address impacts on the society as a whole, rather than the utility and its ratepayers. The SCT applies a GHG adder which is added as an incentive to reduce GHG emissions, and gradually increases each year. A societal discount rate of 3% is utilized rather than the utility cost of capital, thereby placing greater value on the benefits for future generations. The SCT also uses an avoided social cost of carbon value accounting for damage costs from climate change. Finally, the SCT adds an air quality value that estimates the impacts on human health from air pollution.

The SCT and PAC should be utilized to compare and contrast the cost effectiveness of DR along with EE and other distributed energy resources, so as to provide guidance on which DERs are most cost effective in any given program.

VI. Cost of Modeling.

Q: Should ratepayers provide $750,000 in 2023 for continued modeling of DR potential and related research overseen by Energy Division?

A: Maybe, but not without further analysis. If it is demonstrated that the DR potential and related research overseen by the Energy Division is cost effective as measured by the PAC and SCT tests, this will benefit ratepayers and society as a whole, and should be undertaken.

Q: Does this conclude your testimony?

A: Yes.

Attachment A

TED HOWARD - Curriculum Vitae

SUMMARY OF PROFESSIONAL EXPERIENCE

Senior Energy Policy Analyst, Small Business Utility Advocates (10/19—Present)

Actively engaged representing small business customers in various actions at the California Public Utilities Commission (CPUC), including related to energy efficiency, wildfires, interconnection under Electric Rule 21, broadband access, PG&E's bankruptcy and regionalization plans, and electric vehicles. Prepare testimony, conduct analysis, and represent SBUA in meetings and workshops. Advocate for fair rates and progressive clean energy and climate change policies for small businesses in California.

Principal, Sustaenable (1/12—10/19)

As EV Charging Contractor for Net Impact, consulted to PG&E on EV charging station challenges and strategies for small and medium businesses. As Vice President of the Citizens Advisory Committee for Peninsula Clean Energy, advised on distributed energy resource technologies and strategies. Visited several hundred small businesses to advise on distributed energy resources for PG&E and Peninsula Clean Energy.

As advisor for Swissnex, developed a distributed energy resources program for Swiss and USA executives from the energy sector, government, and academia. As consultant for Japan's New Energy and Industrial Development Organization, produced reports on California government policies and business strategies for energy storage an energy efficiency.

Community Manager, Agrion (3/12—6/14)

Developed global communities through task forces, meetings, panel discussions, workshops, and online collaboration focused on resolving critical contemporary issues. Focus areas were energy efficiency, microgrids, startups, energy storage, climate change, cap and trade, clean energy, sustainability, smart grid, smart cities, urban mobility, and water. Hosted task forces of public-private industry leaders to facilitate distributed energy resources.

Analyst, Emerging Technologies, California Public Utilities Commission (5/05—3/12)

Actively participated in the staff analysis of energy storage, including a staff report on energy storage policy which was integral for the CPUC's 1.325 GW energy storage mandate. Also involved in several energy efficiency and smart grid proceedings. Created and led CPUC's Thought Leaders Series featuring visionary experts proposing their views on the critical challenges related to CPUC policies on microgrids, clean energy, smart grid, and climate change. Led the effort to create a proactive Water Action Plan for California privately-owned water utilities, and implementing these policies.

SUMMARY OF PROFESSIONAL EXPERIENCE (CONTINUED)

Asia-Pacific & Latin America Director, Quantum Bridge (Acquired by Motorola) (3/00—11/01)

Initiated and developed the business market for optical access equipment of a high profile start-up company, in Asia-Pacific and Latin America.

President and Chief Financial Officer, Deutsche Telekom USA R&D (9/96—9/99)

President: Founded USA research and development subsidiary company for Deutsche Telekom. Subsequently organized and led a team of 12 engineers and business managers to evaluate, test, and develop new Internet and telecommunications services in partnership with leading high tech companies.
Chief Financial Officer: Negotiated and implemented an integration with the local France Telecom research and development organization for a unified USA R&D corporation (ThinkOne, Inc.) founded in the San Francisco Bay area. Executive Founding Sponsor of Silicon Valley World Internet Center, located in Palo Alto, California.

Western Region Director, Deutsche Telekom, Inc. (5/91—9/96)

Opened Western Region office for Deutsche Telekom. With a small sales and marketing team, managed and expanded telecommunications between the Western US and Germany.

International Account Executive, AT&T (7/83—5/91)

International Account Executive: Stimulated AT&T international telecommunications revenue growth in the Silicon Valley by over 50 percent to $1.5 million monthly. Functioned as the international telecommunications expert and liaison. Earned several sales awards, and developed Sales Tool Kit for AT&T's international sales force.
Supervisor, International Marketing: Responsible for the development of an overall strategy for expanding telecommunications services in the USA and internationally.
Assistant Manager, Treasury: Conducted financial and statistical studies to support corporate return on investment testimony for public regulatory organizations.

Economist, Massachusetts Department of Public Utilities (3/81—7/83)

Cross-examined and critically evaluated testimony of experts, and wrote regulatory decisions based on economic and financial analysis.

EDUCATION

M.S., Resource Economics, Virginia Tech, 1980

B.S., Resource Economics, University of Massachusetts, 1977

Attachment A

PROFESSIONAL CERTIFICATES

Energy Innovation & Emerging Technologies, Stanford University, 2012

Smart Grid Technology, University of California-Berkeley, 2011

Sustainable Energy & Storage, Stanford University, 2011

PROFESSIONAL REPORTS

Reports for PG&E as Net Impact EV Charging contractor
"The Customer Journey for Small and Medium EV charging Station Owners", 10/4/19
"California EV Charging Station Grants for Small and Medium Businesses", 9/25/19
"Incentivizing California EV Charging Stations for Small and Medium Businesses—Status Report," 9/25/19
"Barriers to EV Charging Stations Owners", 9/10/19
"EV Charging Station Demographics", 8/29/19

Report for Peninsula Clean Energy
"Peninsula Clean Energy and Local Programs"
By Michael Closson and Ted Howard , 1/18/18

Reports for Japan's New Energy and Industrial Technology Development (NEDO)
"California Energy Storage Policies and Markets", 2/16/15
"California Energy Efficiency Policies and Markets", 2/16/15

CPUC Energy Storage Proceeding R.10-12-007
"Energy Storage Framework Staff Proposal", By Elizaveta Malashenko, Rebecca Lee, Chris Villareal, Ted Howard, and Aloke Gupta, 4/3/12

CPUC Water Action Plan
https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Water/water_action_plan_final_12_27_05.pdf , 12/15, 2005

Master's Thesis at Virginia Tech, Blacksburg, Virginia: "Coal Taxation and Social Services in Central Appalachia", 8/80.